

United States Department of Agriculture  
Bureau of Entomology and Plant Quarantine

### THE STRAWBERRY WEEVIL AND ITS CONTROL\*

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The strawberry weevil (Anththonomus signatus Say) is one of the most important insect enemies of the strawberry in many sections of the United States and Canada. Serious outbreaks have occurred periodically during the past 50 years and have in many instances become more serious as the acreage in commercial plantings has increased, particularly in the strawberry-growing area of the southeastern part of the United States.

#### General Description of the Strawberry Weevil

The strawberry weevil is about one-tenth of an inch long and about one-half as wide. The head is lengthened into a slender curved snout, or beak. Near the end of this snout or beak are two elbowlike antennae or feelers. The body color of the weevil ranges from almost black to dull reddish brown. There is a dark spot just behind the middle of each wing cover, and this dark spot is encircled by a white pubescence.

#### Habits of the Strawberry Weevil

How the weevil damages strawberries.--The principal damage caused by the strawberry weevil to strawberries is done by the female during the process of egg laying. The eggs are laid in the undeveloped buds, and after laying an egg the female beetle cuts the bud stem about a quarter of an inch below the bud. This causes the bud to wither and drop off. The egg laying process starts shortly after the weevils enter the field, so many of the buds may be cut before they have an opportunity to open. A single female may destroy more than 100 flower buds within a few days during the egg-laying process. A small amount of damage may be noticed on the open blossoms caused by the weevils during the course of feeding.

Seasonal history.--In a normal season the strawberry weevils leave their winter quarters a few days before the strawberry blossoms for the early spring crop of fruit begin to appear. This takes place about the first week of March in North Carolina, and would occur correspondingly later in the more northern areas as the season advances northward. The weevils feed for about

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a week on the flower buds and on the pollen of the open flowers before beginning egg laying. In North Carolina the egg laying period lasts from 2 to 3 weeks, depending on the available food supply, or from early in March until May, reaching a peak about April 10. The new generation of the strawberry weevil completes its development and begins to emerge as adults early in May, and continues emerging until about June 20. The newly emerged weevils feed on the pollen of various flowers growing along the margin of the strawberry fields, or in nearby woodlands, for a period ranging from 10 days to 2 weeks. At the expiration of this period they become sluggish and conceal themselves in the most convenient debris in the surrounding woodlands or hedges, and there they remain in an inactive state until the following spring. Mating by the strawberry weevil has been observed to occur only in the spring, and even though plenty of food and flower buds in which to lay eggs are available for the new generation of weevils, no attempt is made by them to produce a second brood during the year.

Where the weevils pass the winter.--In North Carolina most of the strawberry weevils pass the winter concealed in the litter of hedges and woodlands bordering the strawberry fields, and in these areas they are much more numerous near their native host plants, consisting principally of wild strawberry, blackberry, dewberry, raspberry, chokeberry, and serviceberry, since the weevils feed on the flowers of these plants just prior to the time when they enter the summer resting period. By far the greater number of weevils are found within a marginal strip extending not more than 100 feet from the margin of the strawberry field in which they originated, although almost any type of fallen leaves, dead grass, or similar dead vegetation within the fields may serve also as quarters for some of the weevils during the over-wintering period. Preliminary observations in the Eastern Shore districts of Virginia, Maryland, and Delaware have indicated that the proportion of the total strawberry weevil population that overwinters within the confines of the strawberry fields (in or underneath accumulations of dead leaves and vegetation used for mulching), as compared with the weevils overwintering in the marginal strip, is greater in these districts than in the North Carolina strawberry-producing districts.

#### Control Measures

Application of insecticides.--When the weevils cannot be destroyed in their overwintering quarters by burning, or by other available methods, a fairly satisfactory control of the strawberry weevil may be obtained by dusting with a mixture consisting of 1 pound of calcium arsenate and 5 pounds of finely ground dusting sulfur. The first application should be made as soon as the weevil appears in the field, and the second about 10 days or 2 weeks later. The rate of application will range from 10 to 30 pounds per acre, per application, depending upon the density of the strawberry planting. Ordinarily two applications are sufficient to protect the early fruit.

CAUTION.--All applications of poison dusts should be discontinued at least 3 weeks prior to the ripening of the first berries, because where a long bearing season obtains the treatment with an arsenical poison may result in harmful residues on the ripened berries.

Clean-up of winter quarters.--In some districts, where a large proportion of the strawberry weevils pass the winter along the margins of strawberry fields, a most effective method of aiding in the control of this pest is to burn or otherwise destroy the litter, leaves, dead grass, and similar vegetation, which furnishes shelter for the weevils, in a marginal strip approximately 100 feet in width on all sides of the infested fields. These clean-up operations should include also the dead grass and similar vegetation along any ditches, hedges, roadways, or other waste spaces within the field.

CAUTION.--In case the burning method is adopted in the destruction of these materials, it should be carried on during the winter and not in the spring, and every precaution should be taken to prevent the fire from getting into the woods.

How to mix the insecticide.--Home-prepared dust mixtures may be mixed thoroughly by putting the ingredients in a drum or barrel, not over two-thirds full, together with about a dozen stones as large as the fist, and rolling slowly and tilting the drum or barrel at intervals for about 5 minutes. Very small quantities may be prepared by using an ordinary household flour sifter. Be sure that all lumps are broken up and passed through the sifter, and resift at least three times to insure a thorough mixture.

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